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Elite Ecology

Passionate about Ecology

**Land between Cwmavon &
Dan Y Bont**



Preliminary Ecological Appraisal

November 2021



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Preliminary Ecological Appraisal

Elite Ecology

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0. Executive Summary

This report has been prepared for Mr. Jim James (Proprietor). Elite Ecology were commissioned to undertake a Preliminary Ecological Appraisal at Land between Cwmavon and Dan Y Bont, Maes Y Bettws, Pontrhyfen, Neath, SA12 9SD (Central OS Grid Reference: SS 79299 93867). This survey effort involved both a desktop study and field survey being undertaken.

Under the current proposals, there is to be a change of use of land into one gypsy pitch to include one static residential unit, one touring caravan, conversion of part of the existing stable block to create a utility/ day room, the creation of improved access, a parking and turning area, and associated works.

South-East Wales Biological Records Centre (SEWBREC) were commissioned to carry out an ecological data search of all protected species and designated sites recorded within a 2km radius of the site. Cwmavon Coal Tips SINC directly borders the survey site to the east along the River Afan. It is also noted that the survey site falls within an NPT Watercourse area. Please refer to Section 3 for a summary of the desktop data results.

The preliminary ecological appraisal survey revealed five habitats on site. The phase 1 habitat map, habitat codes and target notes for the site are located within Appendix D. The following habitats were recorded on site (in habitat code order):

- **A3.1 – Broadleaf Scattered Trees**
- **C3.1 – Tall Ruderal**
- **J1.3 – Short Perennial**
- **J2.4 – Fence**
- **J3.6 – Buildings**
- **J4 – Bare Ground**
- **J5 – Other Habitat (Rubble Pile)**

Designated Sites:

Cwmavon Coal Tips SINC directly borders the survey site to the east along the River Afan. This means that the any proposed works cannot extend beyond the existing boundary of the site nor negatively impact the SINC in any way. Due to this, it will be necessary to implement a 10m buffer strip between this site and the development area.

It is also noted that the survey site falls within an NPT Watercourse area. This means that a 'flood defence consent' will be required to be applied for from the Neath Port Talbot County Borough Council. This is to ensure that the works do not negatively impact the natural environment through flooding, pollution, loss of habitats or damage to wildlife.

Habitats:

Priority Habitats: No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

Wildlife Corridors: It is recommended that designated wildlife corridors are incorporated into the design scheme of the site. This will be identified within a soft landscaping plan that will also offer a management strategy that is required to be adhered to. Linear features that enhance the site for a number of species should also be included into the scheme of works.

Rubble Pile: For the rubble pile, this will need to be removed by hand following an approved protected species method statement. This is to ensure that no protected, rare or notable species are harmed by its removal. This advice can be disregarded if the rubble pile is to be retained, leading to the creation of suitable refugia for species to continue to use.

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Species:

Bats: As B1 contains low bat roosting potential, one bat emergence/re-entry survey is required on the structure during the optimal survey season of mid-May to August. It has been deemed that two surveyors are required to cover all elevations adequately. No artificial lighting is to be shone on any scattered trees, shrubs, linear features, woodland or waterways. For the site itself, an artificial lighting plan is required. All lighting must avoid the features of interest for the local bat populations. This is required due to the habitats within the local landscape meaning there is likely to be foraging and commuting bats within the local landscape.

Birds: If any of the trees or dense vegetation around the site are proposed for removal, then this needs to be undertaken outside of the bird breeding season (which runs from March to August, inclusive). If this time scale cannot be achieved, the vegetation should be inspected for active bird nests by a suitably qualified ecologist no more than 24 hours prior to the removal process. If bird nests are found, no vegetation removal can take place in that area until the nests become inactive, with an exclusion zone set up to prevent any unlawful damage.

Hedgehogs: As a purely precautionary measure, it is recommended that provisions are incorporated during the construction phase. This will be to create provisions for hedgehogs to escape in the form of creating slopes or the inclusion of ramps at the end of each working day from all trenches dug into the ground. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off. Should this information be strictly adhered to, then the development works will not negatively impact on the local mammal populations

Reptiles: As several habitats suitable for reptiles have been identified on site, it is recommended that a full presence/absence survey is undertaken on the site to establish if any hotspot areas are identified. This will enable adequate compensation and mitigation to ensure the specimens identified remain in favourable conservation status. This consists of setting artificial refugia around the site, with these allowed to 'bed-in' for two weeks. Following this, seven separate visits are undertaken to establish presence/absence on site.

Site Enhancements

For the proposed site enhancements, please see section 5.4 of this report.

Biodiversity Enhancements:

Biodiversity Enhancements needs to be secured within the design scheme of the works. An Ecological Enhancement Strategy should be devised for the site. This will aim to maintain and enhance biodiversity, whilst promoting the resilience of ecosystems.

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1 Introduction

1.1 Report rationale

This report has been prepared for Mr. Jim James (Proprietor). Elite Ecology were commissioned to undertake a Preliminary Ecological Appraisal at the Land between Cwmavon and Dan Y Bont, Maes Y Bettws, Pontrhydyfen, Neath, SA12 9SD (Central OS Grid Reference: SS 79299 93867). This survey effort involved both a desktop study and field survey being undertaken.

The main purpose of this assessment was to identify the broad habitats (as stated in the JNCC Phase 1 Handbook) and the flora species present within the survey area, with any further evidence of protected species usage and/or features of potential ecological interest also included. The field survey was carried out on the 14th of September 2021 by Mr. Connor Wild (BSc [HonsMSc, Ecologist).

1.2 Site description and works

The site is situated in a semi-rural setting on the western edge of the village of Pontrhydyfen. It is separated from the main village by the waters of the River Afan and is bound on its western flank by the large wooded hills of Foel Fynyddau.

The site itself measures roughly 0.21ha and is dominated by five main habitat types. These habitats are: Bare ground, Tall ruderal, Buildings, Short perennial, and Broadleaved scattered trees, some of which could be utilized by protected species. Photographs of the site are found within Appendix E.

Within the wider landscape, further habitats are present. These come in the form of some residential dwellings (and their associated gardens), parkland, woodland, heathland, and steep hills. The habitats that surround the site also have the potential to be utilized by a variety of protected species.

Under the current proposals, there is to be a change of use of land into one gypsy pitch to include one static residential unit, one touring caravan, conversion of part of the existing stable block to create a utility/ day room, the creation of improved access, a parking and turning area, and associated works. These works will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

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Figure 1: An aerial map showing the location of the land proposed for re-development at the Land between Cwmavon and Dan Y Bont (yellow star) in relation to some of the local landscape.

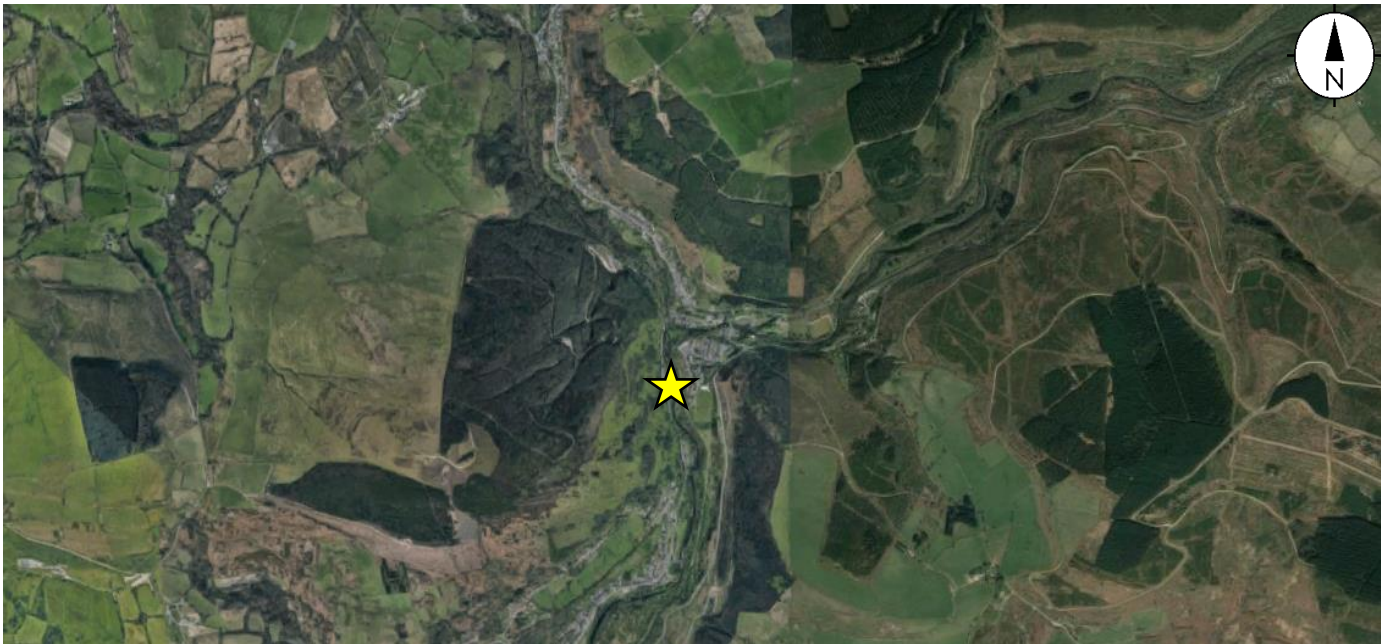
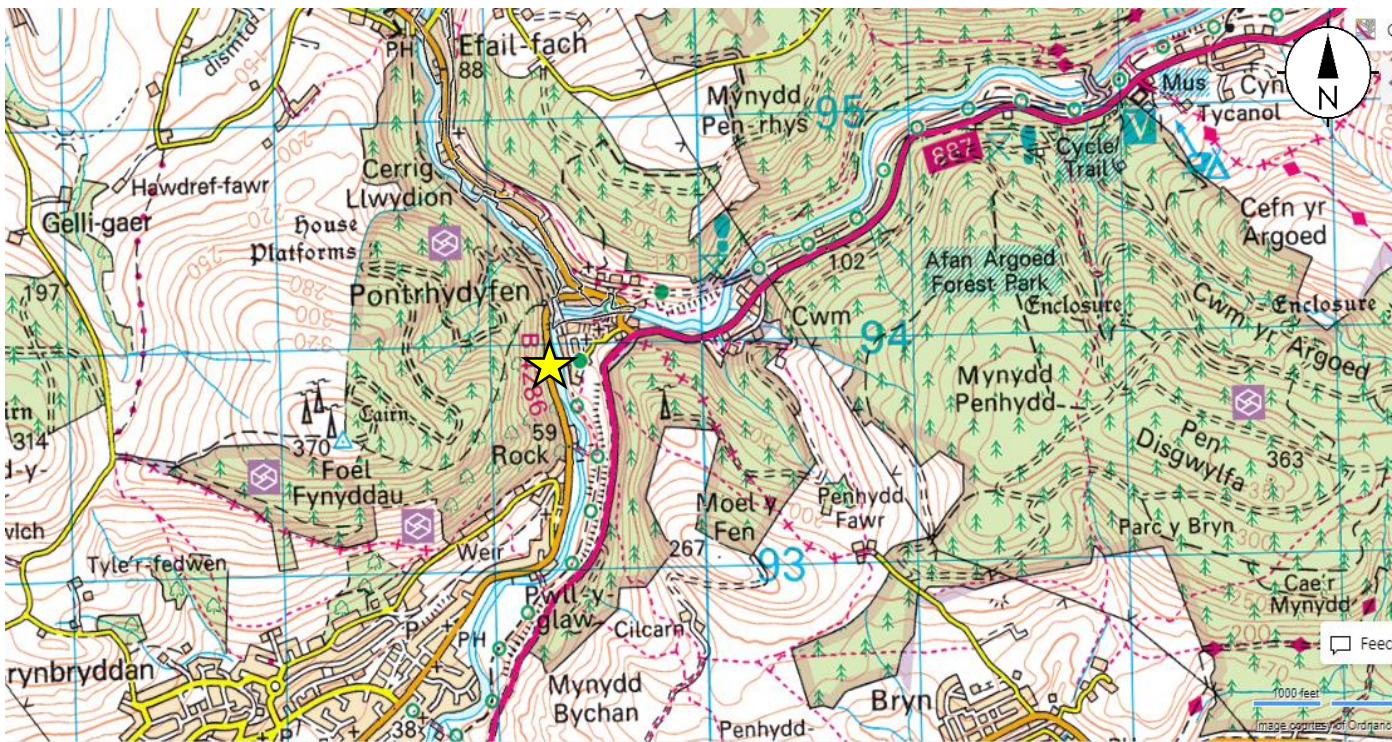


Figure 2: An OS map obtained from Bing showing the location of the survey site at the Land between Cwmavon and Dan Y Bont (yellow star).



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2 Survey Methodology

2.1 Desktop Survey

A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, naturalresources.wales, www.ordnancesurvey.co.uk, Google Maps, Google Earth and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

The local records centre was contacted to provide data on all protected species and designated sites within 2km of the proposed development site. South-East Wales Biological Records Centre (SEWBRc) was the relevant local record centre for this project.

2.2 Field Survey

A Preliminary Ecological Appraisal (previously referred to as an Extended Phase 1 Habitat Survey) was carried out using the method outlined in the JNCC Handbook for *Phase 1 Habitat Survey: a technique for environmental audit (2010)*. This method aims to map and describe the broad habitat types and notable features present on the surveyed site.

As part of the field survey, the floral species will be identified and noted down. This will consider the dominant, abundant, frequent, occasional, and rare (DAFOR) species within each habitat on the survey site. The impacts of the proposed development scheme will be assessed by this report.

Each habitat will be assessed for the presence and/or the potential presence of protected species. The impacts of the proposed scheme of works on all potential protected species on site will be assessed. From this, either remedial action or recommended phase 2 presence/absence surveys will be devised.

Some of the classification codes and colours listed within the JNCC handbook may have been slightly modified for this project.

Habitat Surveys can be carried out at any time of the year, with the optimal time period falling between the months of April through until September. This survey was carried out in September 2021, which is inside of the optimal time period for flora surveys. Elite Ecology feels confident that the majority of the floral species located on the site were competently identified during the survey effort. In addition to this, Elite Ecology feels confident that this report reflects an accurate representation of the sites suitability for protected species to be present.

All sites surveyed by Elite Ecology will be run against the relevant Local Wildlife Site Criteria to assess whether they meet the required standards.

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3 Desktop Survey Results

3.1 Statutory Sites

The ecological data received from SEWBREC revealed no statutory sites within the 2km search radius.

3.2 Non-Statutory Sites

The ecological data received from SEWBREC revealed 9 non-statutory sites within the 2km search area in the form of Local Wildlife Sites (LWS):

Site Name	Designation	Approx. Distance (m)	Heading
Cwmavon Coal Tips	Local Wildlife Site (LWS)	25	E
Cwmafan Green Corridor	LWS	400	SW
Rhyslyn	LWS	490	E
Afan Mineral Railway	LWS	890	NE
Rolling Mill, Cwmavon	LWS	1100	SW
Penrhys Fawr	LWS	1600	N
The Waun, Cimla	LWS	1700	NW
Hawthorn Close	LWS	1800	SW
NPT Watercourses	LWS	0	N/A

Summary:

Cwmavon Coal Tips SINC directly borders the survey site to the east, along the River Afan. It is also noted that the survey site falls within an NPT Watercourse area. Therefore, further precautions are necessary for the site (please see **Section 5.1**).

3.3 Woodland Sites

The information provided by SEWBREC revealed 33 woodland sites within the 2km search area. These are split up with 14 ancient semi-natural woodland (ASNW), 1 Restored Ancient Woodland Sites (RAWS), 9 are Plantation of Ancient Woodland Sites (PAWS), and 9 are NRW Priority Area PAWS.

All are unnamed and the closest to the site is located approximately 25m to the west, on the opposite side of the road adjacent to the survey site. This is in the form of an ASNW.

3.4 Local Geological Sites (LGS)

The information provided by SEWBREC revealed no LGS within 2km of the survey site.

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3.5 Species Records

3.5.1 Amphibians

Within the ecological data search provided by SEWBREC, only common toads (*Bufo bufo*) and common frogs (*Rana temporaria*) were present. The closest record to site is of common toad (*Bufo bufo*), located approximately 484m to the south of the survey site.

3.5.2 Birds

Within the ecological data search provided by SEWBREC, numerous bird records were uncovered. The closest record to the survey site is of mistle thrush (*Turdus viscivorus*) located approximately 83m to the south-east.

3.5.3 Crustacean

Within the ecological data search provided by SEWBREC, no crustacean species were revealed within 2km of the site.

3.5.4 Fish

Within the ecological data search provided by SEWBREC, several fish species were recorded. The closest record to site is of European eel (*Anguilla anguilla*) located approximately 391m to the south of the survey site.

3.5.5 Flora

Within the ecological data search provided by SEWBREC, numerous protected floral species were found with the closest record being of Himalayan honeysuckle (*Leycesteria formosa*) located approximately 74m to the north-east of the survey site.

3.5.6 Invertebrates

Within the ecological data search provided by SEWBREC, several invertebrate species were revealed within 2km of the site. The closest record was of Common carder bee (*Bombus pascuorum*) located approximately 303m to the south of the survey site.

3.5.7 Mammals

Within the ecological data search provided by SEWBREC, multiple mammal species were detected within the 2km search radius of the site. The closest record was of American mink (*Neovison vison*) located approximately 168m to the north of the survey site.

3.5.8 Molluscs

Within the ecological data search provided by SEWBREC, no mollusc species were revealed within 2km of the site.

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3.5.9 Reptiles

Within the ecological data search provided by SEWBREC, several reptile records were revealed within 2km of the survey site. The closet record was of adder (*Vipera berus*) located approximately 398m to the north-east of the survey site.

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4 Field Survey

4.1 Habitats

The preliminary ecological appraisal survey revealed five habitats on site. The phase 1 habitat map, habitat codes and target notes for the site are located within Appendix D. The following habitats were recorded on site (in habitat code order):

4.1.1 A3.1 – Broadleaf Scattered Trees

This habitat covers the majority of the eastern edge of the site, lying along the western bank of the River Afan. Species present include alder (*Alnus glutinosa*), ash (*Fraxinus excelsior*), goat willow (*Salix caprea*), oak (*Quercus robur*) and rowan (*Sorbus aucuparia*). This habitat is of good ecological value, and could potentially be used to some degree by protected species.

4.1.2 C3.1 – Tall Ruderal

This habitat mainly occurs along the fringes of the bare ground and short perennial areas at the centre of the site. Species present include Himalayan balsam (*Impatiens grandulifera*), Japanese knotweed (*Reynoutria japonica*), and a range of ferns. This habitat is of some use to protected species but is not ideal.

4.1.3 J1.3 – Short Perennial

The site contains a main central clearing, the southern portion of which is made up of a short perennial habitat. Species present include creeping cinquefoil (*Potentilla reptans*), dock (*Rumex obtusifolius*), goats' beard (*Aruncus dioicus*), ivy-leaved toadflax (*Cymbalaria muralis*), vetch (*Vicia sativa*) and white clover (*Trifolium repens*). This habitat could be utilised by protected species.

4.1.4 J2.4 – Fence

The perimeter of the site is bounded by fencing. This comprises of wooden panelled fencing on the west, and a portion of post and rail fencing at the east. The fencing to the east has gaps and can enable protected species to enter the site.

4.1.5 J3.6 – Buildings

On site, there are four buildings or other manmade structures.

B1

Building 1 is the largest on site and is the most permanent in its construction. Designed to be used as a stable block, it has breeze block walls, a covered metal fascia, and a corrugated metal roof. The walls are in good condition, with no cracks or crevices to provide potential roosting features. In addition to this, the fascia sits flush to the wall, restricting potential roosting points for bats. No external evidence of bird nests was found. There is, however, a gap within the metal fascia, which leads into the breezeblock cavities, providing potential roosting opportunities at the site.

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Internally, there are timber beams holding up the exposed metal roof, and gaps can be seen all around the roofline. No cracks, crevices or potential bat roosting areas can be found in the structure, with no suitable roosting features noted.

B2

Building 2 is a three-sided shed, with corrugated metal walls and a corrugated metal roof. The eastern elevation contains no walls, and provides clear access to the interior. No evidence of nesting birds were found externally, nor are any potential roosting features apparent.

Internally, timber beams are found supporting the roof of the structure. The structure contains no potential roosting features, nor was any evidence of nesting bird found. It should be noted, however, that this building contains invasive species, with Himalayan balsam (*Impatiens grandulifera*) and Japanese knotweed (*Reynoutria japonica*) present.

B3 and B4

Buildings 3 and 4 are steel containers of two different designs but are both used for storage. These steel containers are not of any interest to protected species.

Summary of the building inspection

Due to the amount of potential ingress/egress points and suitable roosting features, the structures at the Land between Cwmavon and Dan y Bont were deemed as having the following bat and bird potential:

Building	Nesting Bird Potential	Bat Roost Potential	Number of bat activity surveys required	Number of surveyors required for bat activity survey
B1	Unknown	Low	1	2
B2	Negligible	Negligible	0	N/A
B3	Negligible	Negligible	0	N/A
B4	Negligible	Negligible	0	N/A

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Table 1: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

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Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

^a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

4.1.6 J4 – Bare Ground

Much of the central clearing of the site is covered in bare ground, with vegetation absent. This habitat is of minimal ecological value.

4.1.7 J5 – Other Habitat (rubble pile)

Located off-site, to the south-west, a rubble pile. This can be used as refugia by a number of species within the local landscape.

4.2 Species

The preliminary ecological appraisal survey revealed that the habitats which have been outlined for the proposed re-development area have some value to protected species. Further action is required to ensure that the proposed re-development will not negatively affect the local landscape with regards to protected species.

4.2.1 Amphibians (including great crested newts)

The survey indicated that no waterbodies are present on site and no ponds are located within 500m of the survey site. The River Afon does directly border the site, but the site itself is not considered to be suitable for amphibians. Therefore, no further action is necessary.

4.2.2 Badgers

The field survey uncovered no evidence of badger (*Meles meles*) presence located on the proposed re-development site or within the sphere of influence of the works. However, as badger movements change over time further precautionary measures are required for the survey site (please see **Section 5.3**).

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4.2.3 Bats

The survey found that B1 contains low bat roosting potential, ultimately requiring further survey effort. However, none of the remaining buildings (B2, B3 and B4) on site possessed any bat roosting potential, requiring no further survey effort.

The survey also uncovered a number of trees on site, but none are considered to have bat roosting potential and so no further surveys will be required.

Additionally, further precautionary measures are apparent for this species (please see **Section 5.3**).

4.2.4 Birds

The site contained habitats that could be utilised by birds for nesting purposes. Therefore, further precautionary measures are apparent for this species (please see **Section 5.3**).

4.2.5 Hedgehogs

The habitats on site contain features that can support the local hedgehog (*Erinaceus europaeus*) populations. Further recommendations are apparent for this species (please see **Section 5.3**).

4.2.6 Invasive Species

The site was found to contain Himalayan balsam and Japanese knotweed. Therefore, further measures are required for invasive non-native species (INNS) on site.

4.2.7 Invertebrates

The sites located on the proposed re-development area are considered to contain common species only. Therefore, no detrimental impacts from the works will be incurred.

4.2.8 Reptiles

The short perennial and tall ruderal habitats could potentially be used by reptiles. Due to this, further survey work will be required (please see **Section 5.3**).

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4.3 **Potential impacts of the re-development**

Based upon the results from the desktop survey, field survey and using a degree of academic supposition, the uncompensated re-development impacts have been summarised as follows:

- Amphibians – Negligible
- Badgers – Low
- Bats – Unknown
- Birds – Moderate
- Flora – Negligible
- Hedgehogs – Low
- Invertebrates – Negligible
- Reptiles – Unknown

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5 Recommendations

5.1 Designated Sites

Cwmavon Coal Tips SINC directly borders the survey site to the east along the River Afan. This means that any proposed works cannot extend beyond the existing boundary of the site nor negatively impact the SINC in any way. Due to this, it will be necessary to implement a 10m buffer strip between this site and the development area.

It is also noted that the survey site falls within an NPT Watercourse area. This means that a 'flood defence consent' will be required to be applied for from the Neath Port Talbot County Borough Council. This is to ensure that the works do not negatively impact the natural environment through flooding, pollution, loss of habitats or damage to wildlife.

5.2 Habitats

5.2.1 Priority Habitats

No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

5.2.2 Wildlife Corridors

It is recommended that designated wildlife corridors are incorporated into the design scheme of the site. This will be identified within a soft landscaping plan that will also offer a management strategy that is required to be adhered to. Linear features that enhance the site for a number of species should also be included into the scheme of works.

5.2.3 Rubble Pile

For the rubble pile, this will need to be removed by hand following an approved protected species method statement. This is to ensure that no protected, rare or notable species are harmed by its removal. This advice can be disregarded if the rubble pile is to be retained, leading to the creation of suitable refugia for species to continue to use.

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5.3 Species

The site was found to contain the potential to support protected and/or rare species. Therefore, the following recommendations are required for the site:

5.3.1 Bats

As B1 contains low bat roosting potential, one bat emergence/re-entry survey is required on the structure during the optimal survey season of mid-May to August. It has been deemed that two surveyors are required to cover all elevations adequately.

No artificial lighting is to be shone on any scattered trees, shrubs, linear features, woodland or waterways. For the site itself, an artificial lighting plan is required. All lighting must avoid the features of interest for the local bat populations. This is required due to the habitats within the local landscape meaning there is likely to be foraging and commuting bats within the local landscape.

5.3.2 Birds

If any of the trees or dense vegetation around the site are proposed for removal, then this needs to be undertaken outside of the bird breeding season (which runs from March to August, inclusive). If this time scale cannot be achieved, the vegetation should be inspected for active bird nests by a suitably qualified ecologist no more than 24 hours prior to the removal process. If bird nests are found, no vegetation removal can take place in that area until the nests become inactive, with an exclusion zone set up to prevent any unlawful damage.

5.3.3 Hedgehogs

As a purely precautionary measure, it is recommended that provisions are incorporated during the construction phase. This will be to create provisions for hedgehogs to escape in the form of creating slopes or the inclusion of ramps at the end of each working day from all trenches dug into the ground. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off. Should this information be strictly adhered to, then the development works will not negatively impact on the local mammal populations.

Post development, two [Eco Hedgehog Nest Boxes](#) should be included into the site within appropriate locations. It is also recommended that small gaps are left within any boundary fencing to enable the specimens to continue to commute through the area (an example can be found within figure 3). This will ensure that the local hedgehog populations do not become fragmented within the local landscape. Additionally, wildlife corridors should be included around the site to ensure populations don't become fragmented or isolated.

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Figure 3: An image illustrating a gap within a hedgerow to enable hedgehogs to continue to commute through an area and not fragment the populations (Image courtesy of the RSPB).



5.3.4 Reptiles

As several habitats suitable for reptiles have been identified on site, it is recommended that a full presence/absence survey is undertaken on the site to establish if any hotspot areas are identified. This will enable adequate compensation and mitigation to ensure the specimens identified remain in favourable conservation status. This consists of setting artificial refugia around the site, with these allowed to 'bed-in' for two weeks. Following this, seven separate visits are undertaken to establish presence/absence on site.

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5.4 Site Enhancements

For the proposed development works, the following site enhancement measures could be incorporated post-development. These measures are optional.

5.4.1 Amphibians

It is probable that amphibians are residing within the local landscape. Because of this, it is recommended that the site is enhanced to incorporate shelter for these specimens. Two [Frogitat Ceramic Frog and Toad Houses](#) should be installed around the site. In addition to this, two hibernacula should be introduced to the site. These are recommended to be created using materials found around the site where possible, with the hibernacula's design and measurements following the required recommendations (figure 4).

It is also recommended to incorporate at least one pond into the designs for any proposed redevelopment. The ponds should be created following the Natural England Great Crested Newt Mitigation Guidelines and will adhere to the following criteria:

- The ponds will be constructed of numerous sizes and the surface areas will range between 50-200m² (in order to provide various slightly differing habitats). The selection of the pond sizes will be based upon the topography of each individual area, its size and its water retention capacity.
- The ponds will be created with a basin shape and the depth will be approximately 2m at the deepest point. They will also be lined with either clay or a pond liner.
- The ponds will be situated within a cluster of other ponds to ensure the preservation of any meta-populations in the area.
- The south side of the ponds will be clear of vegetation to prevent over shading.
- No ornamental fish should be placed into any wildlife ponds created.

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Figure 4: A diagram that illustrates how the ponds will be created and the habitats included within the aquatic features.

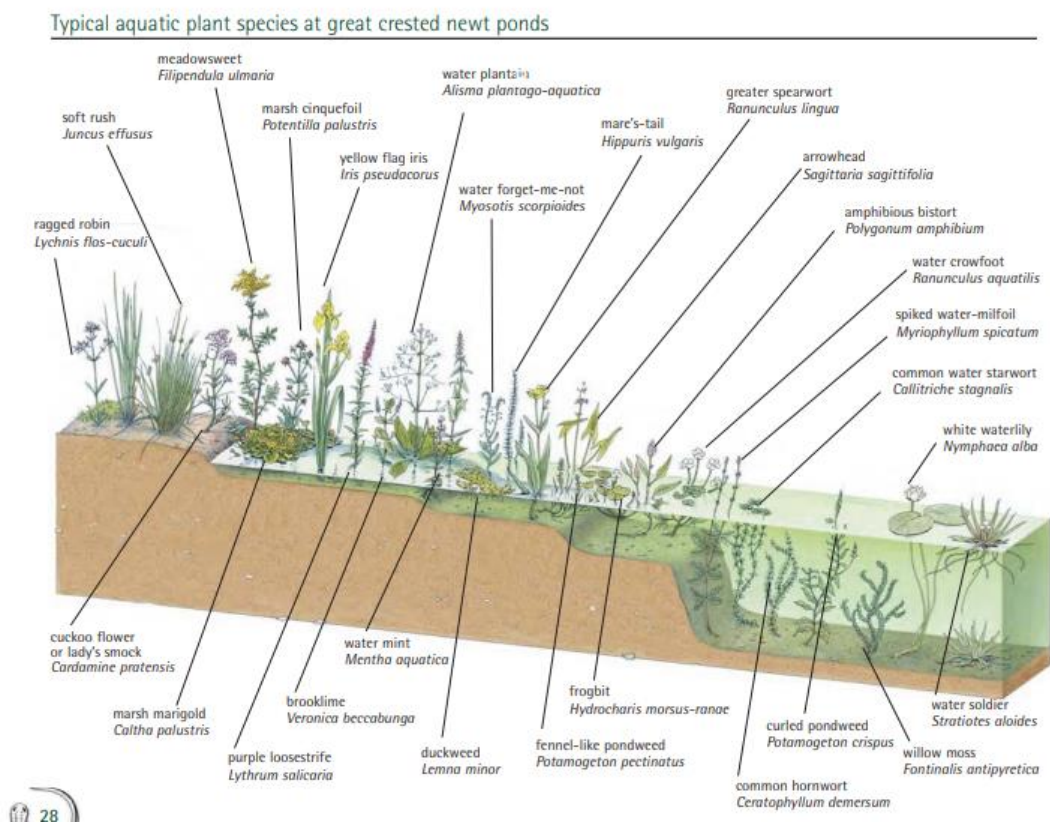
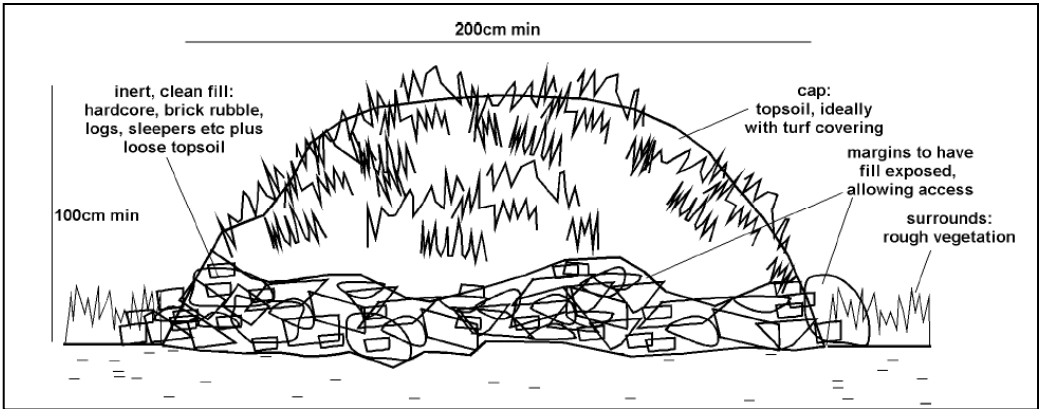


Figure 5: A diagram illustrating how to create a hibernacula and their required measurements.



5.4.2 Bats

It is an option to install [Eco Bat Boxes](#) or [Integrated Eco Bat Boxes](#) onto one of the mature trees present on site. **Please be aware** that all bat features need to avoid artificial lighting and no modern breathable felt should be used.

The site can be enhanced by introducing a bat friendly planting scheme in the soft landscaping plan. The table below outlines species recommended by the Bat Conservation Trust, all of which could be incorporated into the site post development.

Superseded

Flowers for borders	Trees, shrubs & climbers
Aubretia	Bramble
Candytuft	Buddleia
Cherry pie	Common alder
Corncockle	Dogrose
Corn marigold	Elder
Corn poppy	English oak
Echniacea	Gorse
English bluebell	Guelder rose
Evening primrose	Hawthorn
Field poppies	Hazel
Honesty	Honeysuckle (native)
Ice plant 'pink lady'	Hornbeam
Knapweed	Ivy
Mallow	Jasmine
Mexican aster	Pussy willow
Michaelmas daisy	Rowan
Night-scented stock	Silver birch
Ox-eye daisy	Wild flowers for pond edges & marshy areas
Phacelia	Bog bean
Poached egg plant	Bugle
Primrose	Creeping Jenny
Red campion	Flag Iris
Red valerian	Hemp agrimony
Scabious	Lady's smock
St. John's Wort	Marsh mallow
Sweet William	Marsh marigold
Tobacco plant	Marsh woundwort
Verbena	Meadowsweet
Wallflowers	Purple loosestrife
Wood forget-me-not	Water avens
Yarrow	Wood forge-me-not
Herbs	Water mint
Angelica	
Bergamot	
Borage	
Coriander	
English marigolds	
Fennel	
Feverfew	
Hyssop	
Lavenders	
Lemon balm	
Marjoram	
Rosemary	
Sweet Cicely	
Thyme	

Superseded

5.4.3 Birds

Whilst no nesting birds were found, the site does contain plenty of suitable habitats for breeding birds. It is recommended that as many of the trees and hedgerows on site as possible are not touched during the works and there is also the option to install a variety of [bird boxes](#) around the site to enhance the nesting opportunities for a variety of species within the local landscape.

5.4.4 Flora

At present, the site is not considered to have a diverse range of flora. Therefore, it is recommended that portions of the site be converted into a 'wild meadow' that uses native wildflower seed mixes. A variety of these can be found on the [Meadowmania](#) or [Wildflower Turf](#) webpages.

5.4.5 Invertebrates

At present, the site is not considered to be of any importance to local invertebrate populations. In conjunction with the wildflower planting, it is recommended that one [Bumblebee Box](#) are incorporated into the scheme, along with one [Bug Hotel](#). This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

5.4.6 Reptiles

As reptiles could be found within the area, the site could be further enhanced for the local specimens to compliment the suitable reptile habitat that is already present on site. This should come in the form of rough grassland and scrubland sections included around the site. Creating this habitat would enable connectivity to nearby reptile habitats. These should have interfaces between the scrubland and grassland as these transitional zones create a range of microhabitats and microclimates that are favoured by reptile species.

This habitat section will need to have the natural succession ceased to ensure that the habitats remain suitable to the local reptile populations. On this site, this should come in the form of mowing/strimming the habitats on site. This should be done over the winter months when reptiles will be hibernating. Mowing of the grassland should be undertaken every 12 months in November and February of every year. The cuttings from this mowing regime should be left on site in the least disturbed locations to act as potential grass snake (*Natrix natrix*) egg-laying features. These should measure at least 1m³ (the larger the better) and be situated in a sunny location.

Half of the scrubland habitat (and any natural regeneration of trees) should be cut back between mid-September and February once every 2 years, with the remaining half of this habitat being cut back the following 2 years (cutting should continue on a rotational basis between these sections). If any reptiles are found during this management process, then Elite Ecology should be contacted immediately to deal with the impacts. It is imperative that the cutting regime is adhered to, as any deviation from the months may result in the direct killing of reptiles.

Superseded

In this section of habitat, it is recommended that log piles and brash piles are left in scattered locations. These create cover, add structure to the habitats and enhance the availability of food to the reptiles. For this project, a minimum of two of these would be necessary in this habitat.

Hibernacula should also be scattered though the aforementioned habitats. The hibernacula can be made of cut timber, brash, inert hardcore, bricks, rubble, rocks, tree roots and building rubble. A minimum of one of these is advised for this project. The key design features include:

- A sunny location
- A well-drained section of the site
- One of the long sides faces south
- Access for reptiles through openings
- Location within suitable habitat (rough grassland and scrubland in this scenario)
- Minimal anthropogenic disturbance
- Measure at least 4m length x 2m width x 1m height, but the larger the better.

Incorporating the above site enhancement features would benefit the local herptile populations and improve their conservation status within the area. It should also be said that as much of the existing grassland as possible should be maintained post works.

5.5 **Biodiversity Enhancements**

Biodiversity Enhancements needs to be secured within the design scheme of the works. An Ecological Enhancement Strategy should be devised for the site. This will aim to maintain and enhance biodiversity, whilst promoting the resilience of ecosystems.

6 References

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Superseded

7 Appendices

Appendix A: Site Plans

Appendix B: Desktop Study Table

Appendix C: Desktop Study Map

Appendix D: Phase 1 Habitat Map

Appendix E: Site Photographs

Appendix F: Biodiversity Legislation and Policy

Appendix G: Bats and Artificial Light

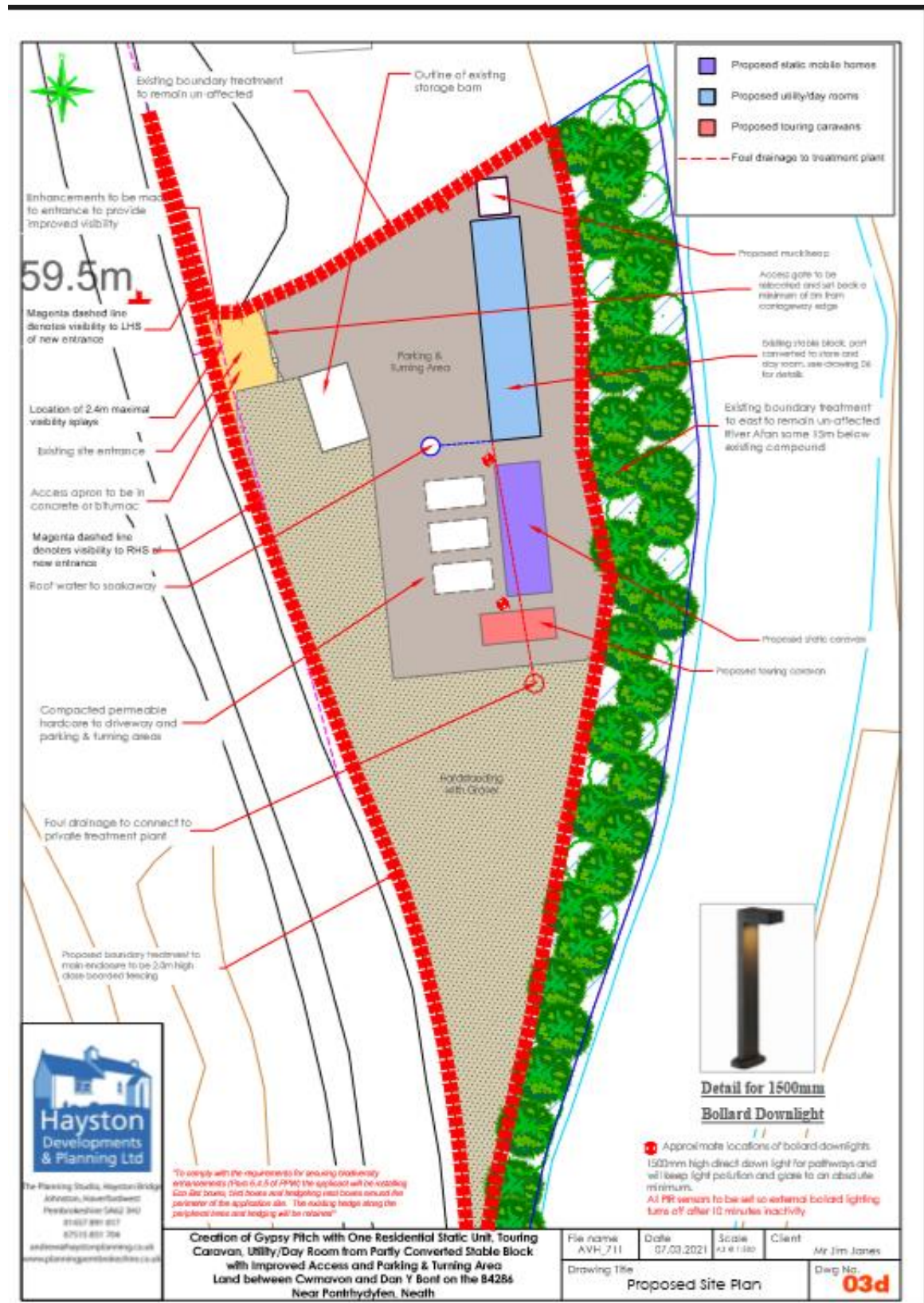
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Land between Cwmavon and Dan Y Bont

Preliminary Ecological Appraisal

Elite Ecology

Appendix A: Site Plans



Superseded

Appendix B: The Ecological Data Tables

Latin Name	Common Name
<i>Vipera berus</i>	Adder
<i>Frangula alnus</i>	Alder Buckthorn
<i>Neovison vison</i>	American Mink
<i>Stilbia anomala</i>	Anomalous
<i>Sagittaria sagittifolia</i>	Arrowhead
<i>Salmo salar</i>	Atlantic Salmon
<i>Ennomos quercinaria</i>	August Thorn
<i>Eugnorisma glareosa</i>	Autumnal Rustic
<i>Anser indicus</i>	Bar-headed Goose
<i>Chiroptera</i>	Bats
<i>Ophrys apifera</i>	Bee Orchid
<i>Prunus padus</i>	Bird Cherry
<i>Sympetrum danae</i>	Black Darter
<i>Chroicocephalus ridibundus</i>	Black-headed Gull
<i>Eupithecia expallidata</i>	Bleached Pug
<i>Timandra comae</i>	Blood-vein
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Fringilla montifringilla</i>	Brambling
<i>Lycia hirtaria</i>	Brindled Beauty
<i>Schistidium platyphyllum</i>	Broadleaf Grimmia
<i>Ceramica pisi</i>	Broom Moth
<i>Aricia agestis</i>	Brown Argus
<i>Lepus europaeus</i>	Brown Hare
<i>Carex disticha</i>	Brown Sedge
<i>Salmo trutta</i>	Brown/Sea Trout
<i>Bombus humilis</i>	Brown-banded Carder-bee
<i>Spilosoma lutea</i>	Buff Ermine
<i>Bombus terrestris</i>	Buff-tailed Bumblebee
<i>Buddleja davidii</i>	Butterfly-bush
<i>Sinapis arvensis</i>	Charlock
<i>Prunus laurocerasus</i>	Cherry Laurel
<i>Tyria jacobaeae</i>	Cinnabar
<i>Bombus pascuorum</i>	Common Carder Bee
<i>Lestes sponsa</i>	Common Emerald Damselfly
<i>Kindbergia praelonga</i>	Common Feather-moss
<i>Rana temporaria</i>	Common Frog
<i>Larus canus</i>	Common Gull
<i>Zootoca vivipara</i>	Common Lizard
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle
<i>Emberiza schoeniclus</i>	Common Reed Bunting
<i>Euphrasia micrantha</i>	Common Slender Eyebright

Superseded

<i>Bufo bufo</i>	Common Toad
<i>Sphagnum compactum</i>	Compact Bog-moss
<i>Phalacrocorax carbo</i>	Cormorant
<i>Agrostemma githago</i>	Corncockle
<i>Centaurea cyanus</i>	Cornflower
<i>Cotoneaster</i>	Cotoneaster
<i>Cuculus canorus</i>	Cuckoo
<i>Numenius arquata</i>	Curlew
<i>Lagarosiphon major</i>	Curly Waterweed
<i>Fissidens bryoides</i> var. <i>caespitans</i>	Curnow's Pocket-moss
<i>Speyeria aglaja</i>	Dark Green Fritillary
<i>Xanthorhoe ferrugata</i>	Dark-barred Twin-spot Carpet
<i>Curruca undata</i>	Dartford Warbler
<i>Myotis daubentonii</i>	Daubenton's Bat
<i>Lampropteryx otregiata</i>	Devon Carpet
<i>Erynnis tages</i>	Dingy Skipper
<i>Cinclus cinclus</i>	Dipper
<i>Melanchra persicariae</i>	Dot Moth
<i>Lateroligia ophiogramma</i>	Double Lobed
<i>Drymus (Sylvadrymus) pumilio</i>	Drymus (Sylvadrymus) pumilio
<i>Prunella modularis</i>	Dunnock
<i>Apamea remissa</i>	Dusky Brocade
<i>Ennomos fuscantaria</i>	Dusky Thorn
<i>Oxyrrhynchium pumilum</i>	Dwarf Feather-moss
<i>Bombus pratorum</i>	Early Bumblebee
<i>Sciurus carolinensis</i>	Eastern Grey Squirrel
<i>Alopochen aegyptiaca</i>	Egyptian Goose
<i>Cotoneaster integrifolius</i>	Entire-leaved Cotoneaster
<i>Meles meles</i>	Eurasian Badger
<i>Pyrrhula pyrrhula</i>	Eurasian Bullfinch
<i>Alauda arvensis</i>	Eurasian Skylark
<i>Anguilla anguilla</i>	European Eel
<i>Picus viridis</i>	European Green Woodpecker
<i>Larus argentatus</i>	European Herring Gull
<i>Lutra lutra</i>	European Otter
<i>Euphrasia confusa</i>	Eyebright
<i>Euphrasia nemorosa</i> x <i>confusa</i>	Eyebright
<i>Turdus pilaris</i>	Fieldfare
<i>Bombus sylvestris</i>	Forest Cuckoo Bee
<i>Agrimonia procera</i>	Fragrant Agrimony
<i>Bombus hortorum</i>	Garden Bumblebee
<i>Arctia caja</i>	Garden Tiger
<i>Hepialus humuli</i>	Ghost Moth
<i>Cossus cossus</i>	Goat Moth

Superseded

<i>Regulus regulus</i>	Goldcrest
<i>Cordulegaster boltonii</i>	Golden-ringed Dragonfly
<i>Accipiter gentilis</i>	Goshawk
<i>Natrix helvetica</i>	Grass Snake
<i>Lathyrus nissolia</i>	Grass Vetchling
<i>Locustella naevia</i>	Grasshopper Warbler
<i>Hipparchia semele</i>	Grayling
<i>Tettigonia viridissima</i>	Great Green Bush Cricket
<i>Hypnum cupressiforme</i> var. <i>lacunosum</i>	Great Plait-moss
<i>Vinca major</i>	Greater Periwinkle
<i>Veronica agrestis</i>	Green Field-speedwell
<i>Chloris chloris</i>	Greenfinch
<i>Acronicta psi</i>	Grey Dagger
<i>Ardea cinerea</i>	Grey Heron
<i>Motacilla cinerea</i>	Grey Wagtail
<i>Harmonia axyridis</i>	Harlequin Ladybird
<i>Picris hieracioides</i>	Hawkweed Oxtongue
<i>Bombus jonellus</i>	Heath Bumblebee
<i>Campylopus introflexus</i>	Heath Star Moss
<i>Luzula multiflora</i> subsp. <i>multiflora</i>	Heath Wood-Rush
<i>Cotoneaster simonsii</i>	Himalayan Cotoneaster
<i>Leycesteria formosa</i>	Himalayan Honeysuckle
<i>Cotoneaster bullatus</i>	Hollyberry Cotoneaster
<i>Passer domesticus</i>	House Sparrow
<i>Distichium inclinatum</i>	Inclined Distichium
<i>Impatiens glandulifera</i>	Indian Balsam
<i>Fallopia japonica</i>	Japanese Knotweed
<i>Rosa rugosa</i>	Japanese Rose
<i>Orthetrum coerulescens</i>	Keeled Orthetrum
<i>Falco tinnunculus</i>	Kestrel
<i>Alcedo atthis</i>	Kingfisher
<i>Sagina nodosa</i>	Knotted Pearlwort
<i>Vanellus vanellus</i>	Lapwing
<i>Oceanodroma leucorhoa</i>	Leach's Storm Petrel
<i>Riccia subbifurca</i>	Least Crystalwort
<i>Lemna minuta</i>	Least Duckweed
<i>Larus fuscus</i>	Lesser Black-backed Gull
<i>Acanthis cabaret</i>	Lesser Redpoll
<i>Dryobates minor</i>	Lesser Spotted Woodpecker
<i>Curruca curruca</i>	Lesser Whitethroat
<i>Curruca curruca curruca</i>	Lesser Whitethroat (curruca)
<i>Calliergonella lindbergii</i>	Lindberg's Plait-moss
<i>Linaria cannabina</i>	Linnet
<i>Aegithalos caudatus</i>	Long-tailed Tit

Superseded

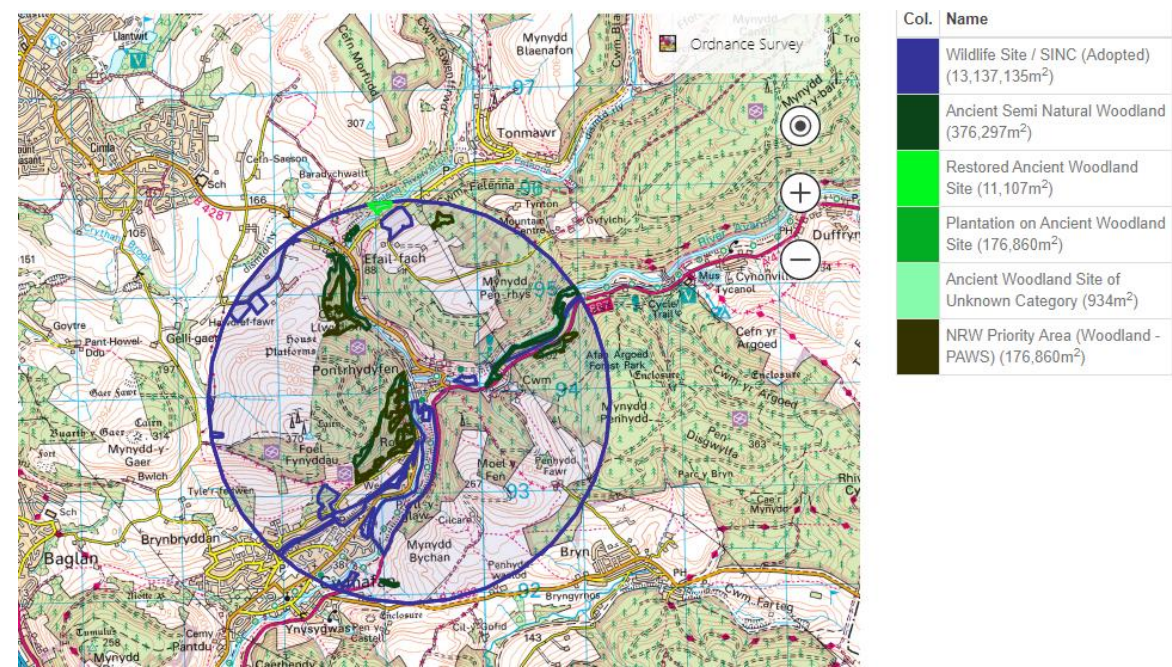
<i>Conocephalus fuscus</i>	Long-winged Cone-head
<i>Anas platyrhynchos</i>	Mallard
<i>Aix galericulata</i>	Mandarin Duck
<i>Dichodontium palustre</i>	Marsh Forklet-moss
<i>Euphydrias aurinia</i>	Marsh Fritillary
<i>Poecile palustris</i>	Marsh Tit
<i>Anthus pratensis</i>	Meadow Pipit
<i>Turdus viscivorus</i>	Mistle Thrush
<i>Mimulus guttatus</i>	Monkeyflower
<i>Crocoshia pottsii</i> x <i>aurea</i> = <i>C. x crocosmiiflora</i>	Montbretia
<i>Xestia castanea</i>	Neglected Rustic
<i>Epilobium brunnescens</i>	New Zealand Willowherb
<i>Didymodon nicholsonii</i>	Nicholson's Beard-moss
<i>Caprimulgus europaeus</i>	Nightjar
<i>Nyctalus noctula</i>	Noctule Bat
<i>Riccardia palmata</i>	Palmate Germanderwort
<i>Falco peregrinus</i>	Peregrine
<i>Phascum cuspidatum</i> var. <i>piliferum</i>	<i>Phascum cuspidatum</i> var. <i>piliferum</i>
<i>Martes martes</i>	Pine Marten
<i>Pipistrellus pipistrellus</i>	Pipistrelle
<i>Pipistrellus</i>	Pipistrelle
<i>Didymodon icmadophilus</i>	Pointed Beard-moss
<i>Mustela putorius</i>	Polecat
<i>Fissidens curvatus</i>	Portuguese Pocket-moss
<i>Psychomyia fragilis</i>	<i>Psychomyia fragilis</i>
<i>Coturnix coturnix</i>	Quail
<i>Loxia curvirostra</i>	Red Crossbill
<i>Galeopsis angustifolia</i>	Red Hemp-nettle
<i>Milvus milvus</i>	Red Kite
<i>Phoenicurus phoenicurus</i>	Redstart
<i>Bombus lapidarius</i>	Red-tailed Bumblebee
<i>Turdus iliacus</i>	Redwing
<i>Rhododendron ponticum</i>	<i>Rhododendron ponticum</i>
<i>Ceratophyllum demersum</i>	Rigid Hornwort
<i>Turdus torquatus</i>	Ring Ouzel
<i>Hydraecia micacea</i>	Rosy Rustic
<i>Geranium rotundifolium</i>	Round-leaved Crane's-bill
<i>Mentha suaveolens</i>	Round-leaved Mint
<i>Osmunda regalis</i>	Royal Fern
<i>Bryoerythrophyllum ferruginascens</i>	Rufous Beard-moss
<i>Hoplodrina blanda</i>	Rustic
<i>Riparia riparia</i>	Sand Martin
<i>Ischnura pumilio</i>	Scarce Blue-tailed Damselfly
<i>Tadorna tadorna</i>	Shelduck

Superseded

<i>Argynnis paphia</i>	Silver-washed Fritillary
<i>Anguis fragilis</i>	Slow-worm
<i>Filago minima</i>	Small Cudweed
<i>Coenonympha pamphilus</i>	Small Heath
<i>Boloria selene</i>	Small Pearl-bordered Fritillary
<i>Ecliptopera silaceata</i>	Small Phoenix
<i>Diarsia rubi</i>	Small Square-spot
<i>Gallinago gallinago</i>	Snipe
<i>Polygonatum multiflorum</i>	Solomon's-seal
<i>Turdus philomelos</i>	Song Thrush
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle
<i>Hyacinthoides hispanica</i>	Spanish Bluebell
<i>Muscicapa striata</i>	Spotted Flycatcher
<i>Sturnus vulgaris</i>	Starling
<i>Anthemis cotula</i>	Stinking Chamomile
<i>Hirundo rustica</i>	Swallow
<i>Apus apus</i>	Swift
<i>Temnocerus longiceps</i>	Temnocerus longiceps
<i>Thaumastoptera calceata</i>	Thaumastoptera calceata
<i>Anthus trivialis</i>	Tree Pipit
<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife
<i>Myotis</i>	Unidentified Bat
<i>Usnea articulata</i>	Usnea articulata
<i>Cotoneaster horizontalis</i>	Wall Cotoneaster
<i>Weissia controversa</i> var. <i>densifolia</i>	Weissia controversa var. densifolia
<i>Erinaceus europaeus</i>	West European Hedgehog
<i>Tyto alba</i>	Western Barn Owl
<i>Oenanthe oenanthe</i>	Wheatear
<i>Saxicola rubetra</i>	Whinchat
<i>Myotis mystacinus</i>	Whiskered Bat
<i>Spilosoma lubricipeda</i>	White Ermine
<i>Nymphaea alba</i>	White Water-lily
<i>Agriphila latistria</i>	White-streak Grass-veneer
<i>Bombus lucorum</i>	White-tailed Bumblebee
<i>Curruca communis</i>	Whitethroat
<i>Phylloscopus trochilus</i>	Willow Warbler
<i>Lonicera nitida</i>	Wilson's Honeysuckle
<i>Pyrola rotundifolia</i> subsp. <i>maritima</i>	Wintergreen
<i>Phylloscopus sibilatrix</i>	Wood Warbler
<i>Scolopax rusticola</i>	Woodcock
<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>	Yellow Archangel
<i>Lathyrus aphaca</i>	Yellow Vetchling
<i>Emberiza citrinella</i>	Yellowhammer

Superseded

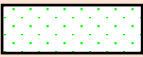
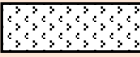
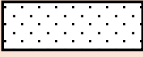
Appendix C: The Ecological Data Search Maps



Superseded

Appendix D: Phase 1 Habitat Map



KEY	
	A3.1 – Broadleaf Scattered Trees
	C3.1 – Tall Ruderal
	J1.3 – Short Perennial
	J2.4 – Fence
	J3.6 - Buildings
	J4 – Bare Ground

Superseded

Appendix E: Site Photographs

Plate 1: An image looking south at the short perennial habitat.



Plate 2: An image of B2, B3, and B4



Plate 3: An image showing B1 and some of the bare ground



Superseded

Plate 4: An image showing the interior of B1



Plate 5: An image showing some of the tall ruderal habitat and the scattered trees beyond.



Plate 6: an image showing some of the Himalayan balsam on site.



Superseded

Appendix F: Biodiversity Legislation and Policy

General Legislation and Policy:

The framework of legislation and policy which underpins nature conservation in Wales. This is a material consideration in the planning process in Wales.

Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2010 as amended)

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation Regulations 1994 and the conservation of habitats and species regulations 2010 (and all their amendments). The Conservation of Habitats and Species Regulations 2017 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Conservation of Habitats and Species Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Conservation of Habitats and Species Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Wildlife and Countryside Act (WCA) 1981 (As amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats. & c.) Regulations 1994 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

Superseded

The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs.

The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists supersede Section 74 of the CROW Act 2000. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Biodiversity Action Plan

The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, is a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contains a list of priority habitats and species of conservation concern in the UK, and outlines biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats are also included. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP requires that conservation of biodiversity is addressed at a County level through the production of Local BAPs. These are complementary to the UKBAP, however are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. UKBAP and Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Superseded

Planning Policy (England) and National Planning Policy Framework

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2021, with the section in relation to conserving the natural environment being located within section 6.

Section 6, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

Species Specific Legislation

This section contains a summary of legislation with relation to the species present or potentially present in the survey area. The reader should refer to the original legislation for definitive interpretation.

Nesting and Nest Building Birds

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

'Reckless' offences with regard to the disturbance of nesting wild birds included in Schedule 1 of the Wildlife and Countryside Act were added by the Countryside and Rights of Way Act 2000.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.

The reader is referred to the original legislation for the definitive interpretation.

Superseded

Badger

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- dig for a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger; and
- interfere with a badger sett by:
 - damaging a sett or any part thereof;
 - destroying a sett;
 - obstructing access to a sett;
 - causing a dog to enter a sett; and
 - disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger".

Bats

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2010
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

Superseded

National Planning Policy Framework, Section 15:

The published framework in 2018 replaces the previous Planning Policy Statement 9 and National Planning Policy (dated 2012).

Section 15: Conserving and enhancing the natural environment reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife. It also aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

Freshwater White-clawed Crayfish

The white-clawed crayfish is partially protected under Wildlife and Countryside Act 1981 (as amended). It is listed on schedule 5 and therefore afforded protection under Section 9 (1 and 5). Therefore, it is an offence to take white-clawed crayfish and to sell, or attempt to sell, any part of the species, alive or dead, or intend to buy or sell.

Great Crested Newt

The great crested newt (*Triturus cristatus*) is fully protected under a variety of legislation and conventions. These include:

- Bern Convention (Appendix II)
- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- Conservation of Habitats and Species Regulations 2010
- EU Habitats Directive (Annex II and IV)
- Nature Conservation (Scotland) Act 2004
- NERC Act 2006 (Section 41 England; Section 42 Wales)
- Wildlife and Countryside Act 1981 (as amended)

In addition to this, the great crested newt has been listed as a priority species on the UK Biodiversity Action Plan (UKBAP).

This legislation covers all aspects of newt life stages (eggs, efts and adult newts) and makes it illegal to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

Licenses can be obtained from Natural England (DEFRA) under the Conservation (Natural Habitats etc.) Regulations 1994, to permit activities for the purposes of:

- Regulation 44(2)(e): Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, or
- Regulation 44(2)(f): Preventing the spread of disease
- Regulation 44(2)(g): Preventing serious damage to any form of property or fisheries

Or

- If there is no satisfactory alternative.

Superseded

Hazel Dormouse

Hazel Dormouse and their habitats are protected by:

- Wildlife and Countryside Act 1981 (as amended)
- Countryside Rights of Way (CROW) 2000
- The Natural Environment and Rural Communities Act 2006
- Conservation of Habitat and Species Regulations 2010

These make it an offence to:

- Capture, injure or kill a Hazel Dormouse
- Disturb a Hazel Dormouse
- Damage or destroy breeding or nesting sites in use by Hazel Dormice
- Disturb a Dormouse whilst it is occupying a structure or place that they use for shelter or protection
- Obstruct access to any structure or place that the Dormouse uses for shelter and protection.
- To possess or control any live or dead specimens.

Otter

Otters are fully protected by the European Habitats Directive (92/43/EEC) by being incorporated in annex II of the legislation. In addition to this, otters are listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take an otter.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by otters.
- To intentionally or recklessly disturb an otter whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell otters.

Reptiles

All six native reptiles within Great Britain are legally protected, with the extent of protection varying dependent upon their rarity and conservation importance.

Those that receive full protection under the Wildlife and Countryside Act 1981 (as amended) are the rare sand lizard and smooth snake. These species also receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (also referred to as the Habitats Directive). This means that they are protected from deliberate disturbance, killing, injury or capture and the habitat in which they live is also fully protected against damage or destruction. Any activity involving disturbance or damage to habitats utilised by sand lizards or smooth snakes would require a licence issued by the Department of the Environment, Food and Rural Affairs (DEFRA) following consultation with the statutory nature conservation organisation (Natural Resources Wales).

Superseded

The remaining four reptile species are 'partially protected' under the Wildlife and Countryside Act 1981 (as amended), with these species being slow-worm, common lizard, grass snake and adder. This means that these species are protected against intentional killing, injuring and against sale, but their habitat is not protected. In planning terms this means that the presence of these species is a material consideration and there is a requirement to ensure that any reptile interest is safeguarded. If a proposed development is likely to have an impact on these reptiles, then the statutory nature conservation organisation must be notified, particularly if capture and translocation is being proposed. In some parts of the UK, sites that support common reptile species such as common lizards and slow-worms can qualify as County Wildlife Sites. Sites of this designation may receive protection in planning policy.

Water Voles

Water Voles are fully protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take a water vole.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by water voles.
- To intentionally or recklessly disturb a water vole whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell water voles.

Non-Native Floral Species

It is an offence under schedule 9 of the Wildlife and Countryside Act 1981 (as amended) to plant or otherwise cause non-native flora to grow in the wild. This includes the transportation of earth that has previously had non-native species growing and includes the spread of the species.

All stands of non-native floral species need to be disposed of safely at a licenced landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

Superseded

Appendix G: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ To introduce lighting curfews or use of PIR sensors.

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ To consider no lighting solutions where possible.

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ To use only high pressure sodium or warm white LED lamps where possible.

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ To minimise the spread of light.

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ To consider the height of the lighting column.

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ To avoid reflective surfaces below lights.

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

Superseded

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